

REMARKS/ARGUMENTS

Claims 1 to 8 and 24 to 35 remain in this application. Claims 5, 7 and 8 were previously amended. Claims 1 and 3 are currently being amended. Claims 9 to 23 have been canceled without prejudice for submitting in a continuing application. Claims 24 to 35 have been added.

The Examiner has maintained the election/restriction requirement between Group I, claims 1 to 12; Group II, claims 13, 15 to 20; Group III, claim 14; and Group IV, claims 21 to 23, presenting a new basis for the restriction. While Applicant disagrees with the restriction between Groups II, III and IV, these claims have been canceled and will be presented in a continuing application. Applicants' position that the method of claims 21 to 23 cannot be used to make an ink, because step (c) of curing the composition in claim 21 would destroy the ink composition will be presented in the continuing application. New claims 24 to 35 read on the invention of elected Group I.

The Specification and claim 3 have been amended as suggested by the Examiner. Claims 9 and 12 have been canceled. Therefore, the objections to the Specification and claim 3 and the Section 112 rejection of claims 9 to 12 have been overcome.

The Specification has also been amended to include a more detailed description of the UCAR AW-875 vinyl resin dispersion. Support for this amendment is found in the product bulletin, filed herewith. Since the bulletin was published in 1996 and the inserted description is inherent, no new matter has been added.

Claims 1 to 3 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ruske. The Examiner cites column 1, lines 19 to 35, and claim 1 for support. However, a careful reading the cited

paragraph evidences that Ruske teaches coloring plastics such as polyvinyl chloride, melamine resin, epoxy resin, polyurethane resin, or a combination of “said resins” with his anthraquinoneoxadiazole pigment. Therefore, there is a teaching of combining melamine resin, epoxy resin and polyurethane resin, but no teaching of combining those resins with the polyvinyl chloride.

Further, at column 1, lines 19 to 28, Ruske teaches coloring “high molecular weight organic thermoplastic materials such as polyvinyl chloride” (emphasis supplied). Thermoplastic materials soften on heating and harden on cooling. Dispersions of polyvinyl chloride particles do not soften upon heating.

Ruske does not teach an aqueous dispersion of polyvinyl chloride or an aqueous dispersion comprising polyvinyl chloride resin particles, polyurethane resin particles and epoxy resin particles. Even if the melamine resin, epoxy resin and polyurethane resin were combined with the thermoplastic polyvinyl chloride of Ruske, the claimed dispersion of polyurethane resin particles, epoxy resin particles and polyvinyl chloride resin particles would not result. One cannot re-disperse a thermoplastic polyvinyl chloride material in water without first subjecting the polyvinyl chloride material to a chemical reaction/process. See the enclosed declaration of Dong Tian.

At column 2, lines 27 and 28, Ruske does teach dispersing his dry pigment “in plastics of the abovementioned type.” Therefore, he teaches dispersing his pigment in the thermoplastic materials and other plastics disclosed at column 1, lines 19 to 35. However, the thermoplastic materials are not dispersions and cannot be dispersed, and the other plastics including the listed plastic resins, the organic solvent surface coatings and the aqueous organic emulsions do not include polyvinyl chloride.

Examples 1 and 3 of Ruske teach incorporating the pigment into polyvinyl chloride powder on heated mixing rolls. Again, this does not teach a polyvinyl chloride aqueous dispersion, or the claimed mixture of aqueous dispersions. They are examples of dispersing the pigment into thermoplastic material, not dispersing the thermoplastic material.

Claim 1 of Ruske, which was also cited by the Examiner, is further evidence that Ruske does not suggest a combination of polyvinyl chloride, polyurethane and epoxy resins. The claim requires “a polymer selected from the group consisting of” but does not include the language “and combinations thereof.” In claim 3, he claims a “polystyrene, co-polymer of styrene with butadiene, acrylonitrile, an acrylate or mixtures thereof” but, again, there is no suggestion of combining polyvinyl chloride with another resin.

There is no teaching or suggestion in Ruske of combining polyvinyl chloride with polyurethane and epoxy, or combining dispersions of polyurethane resin particles, epoxy resin particle and polyvinyl chloride resin particles. Therefore, claim 1, from which claims 2 and 3 depend, is neither anticipated by nor obvious in view of Ruske. New independent claims 25, 28 and 33 are allowable for the same reasons.

Claims 1 to 6 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kotera et al. However, as with Ruske, there is no teaching or suggestion of combining polyvinyl chloride with polyurethane or epoxy.

Polyvinyl chloride is mentioned at column 8, line 9, but it is an example of a surface onto which Kotera's polyester resin aqueous dispersion is coated. See column 8,

lines 1 to 9. Again, at column 8, lines 58 to 61, the inventive aqueous printing ink is adhered to a polyvinyl chloride film.

In the carryover paragraph of columns 8 and 9, use of the “polyester resin aqueous dispersion of the present invention ... as an aqueous binder for coating” is described. While the aqueous binder may include curing agents and modifying agents such as “epoxy resin dispersion [and] urethane resin dispersion”, there is no suggestion to include a polyvinyl chloride dispersion.

In the paragraph at column 9, lines 14 to 47, a surface treating agent for plastic products, such as polyvinyl chloride, is described. At lines 36 to 42, Kotera teaches that the surface treating agent may be incorporated with curing agents, acrylic emulsion, acrylic dispersion, polyvinyl chloride emulsion and self-emulsifiable polyurethane, but there is no suggestion of including epoxy resin particles in either an emulsion or dispersion form. Note that Kotera distinguishes between an acrylic emulsion and an acrylic dispersion.

If the Examiner maintains her position that Kotera suggests a dispersion of polyurethane resin particles, epoxy resin particle and polyvinyl chloride resin particles, she is respectfully requested to point out where in Kotera the suggestion occurs. She has pointed out in paragraph 9 of the Office Action where reference to the individual components occurs. There is a suggestion to combine epoxy resin and urethane resin, and to combine polyvinyl chloride and polyurethane, but there is no suggestion to combine all three. Without such a suggestion, claim 1 and claims 2 to 6, which depend from claim 1, are allowable. New independent claims 25, 28 and 33 are allowable for the same reasons.

Claims 7 to 12 have been rejected as being obvious in view of Kotera et al.

Claims 9 to 12 have been canceled without prejudice to resubmitting in a continuing application. Claims 7 and 8 depend on claim 1. Therefore, they are allowable for the same reasons as claim 1.

Claims 1, 7 and 8 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bontinck et al. Claim 1 has been amended, and claims 25, 28 to 30 and 33 have been added, to distinguish Bontinck. Support for the amendment to claim 1 and new claims 25, 28 to 30 and 33 is found at page 4, line 23, to page 5, line 4, of the original Specification and the UCAR[®] product bulletin that describes the structure of UCAR[®] Waterborne Vinyl Resin AW-845 and is filed herewith. Support for the other new claims is found in the original claims and page 5, line 18, to page 6, line 17, of the Specification, for example.

Bontinck does not teach the polyvinyl chloride resin of amended claim 1 or new claims 25, 28 to 30 and 33. The vinyl polymer of Bontinck has a chain-pendant acetoacetoxyalkyl ester group. The present polyvinyl chloride resin is limited to polyvinyl chloride homopolymer resin (claims 1, 28 and 29); vinyl chloride/vinyl acetate copolymer (claims 28, 30 and 33); polyvinyl chloride resins having pendant ester groups, specifically alkyl esters, alkoxy esters, carboxylic and acid-containing esters (claim 1), or acetate, hydroxyl-containing and carboxylic acid-containing esters (claim 25); and polyvinyl chloride resins including hydroxyl-containing vinyl monomers, carboxylic acid-containing vinyl monomers (claims 28 and 33).

None of the claims permit the acetoacetoxyalkyl ester pendent group required by Bontinck. New independent claims 25, 28 and 33 are allowable for the same reasons as claim 1. Therefore, the present claims are allowable over Bontinck.

Applicants submit that the application is now in a condition for issuance.

Therefore, early consideration and allowance are respectfully requested.

Respectfully submitted,

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Date

Douglas E. Winters
Douglas E. Winters
Reg. No. 29,990
Attorney for Applicants

Armstrong World Industries, Inc.
P.O. Box 3001
Lancaster, PA 17604
(717) 396-4070 (Telephone)
(717) 396-6121 (Facsimile)

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April M. Fiedler